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193188 MLRS MISSILE NUMBER BN-198 BN-158 BN-170 BN-209  
BN-194 BN-215 ROUN..(U) ARMY ELECTRONICS RESEARCH AND  
DEVELOPMENT COMMAND WSMR NM ATM.. D C KELLER 04 MAR 83  
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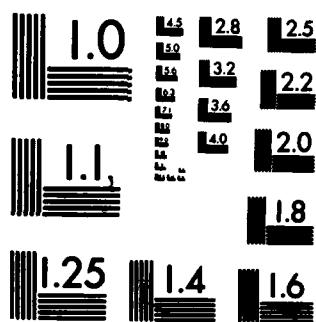
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MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-1963-A

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METEOROLOGICAL DATA REPORT

19318B MLRS

Missile Number BN-198, BN-158, BN-170,  
BN-209, BN-194, BN-215  
Round Number V-443/OT-49 Thru V-448/OT-54  
4 March 1983

by

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Program Support Coordinator  
Phone Number (505) 679-9568  
AVN Number 349-9568

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ATMOSPHERIC SCIENCES LABORATORY  
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)  Meteorological data gathered for the launching of the 193188 MLRS, Missile Number BN-193, BN-158, BN-170, BN-209, BN-194, BN-215, Round Number V-443/OT-49 Thru V-448/OT-54 are presented in tabular form.		

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## CONTENTS

INTRODUCTION-----	1
DISCUSSION-----	1
GENERAL AREA MAP-----	2
LAUNCH AREA DIAGRAM-----	3
TABLES:	
1. Surface Observations taken at 1617 MST at LC-33-----	4
2. Anemometer-Measured Wind Speed and Direction, LC-33 Fixed Pole, taken at 1617 MST-----	5
3. Anemometer-Measured Wind Speed and Direction, Tower Levels 1, 2, 3, and 4, taken at 1617 MST-----	5
4. Launch Area Pilot-Balloon Measured Wind Data-----	6
5. Aiming Computer Net Messages-----	7
6. WSD Significant Level Data at 1231 MST-----	8
7. WSD Upper Air Data at 1231 MST-----	9
8. WSD Mandatory Levels at 1231 MST-----	10
9. WSD Significant Level Data at 1341 MST-----	11
10. WSD Upper Air Data at 1341 MST-----	12
11. WSD Mandatory Levels at 1341-----	13
12. LC-37 Significant Level Data at 1413 MST-----	14
13. LC-37 Upper Air Data at 1413 MST-----	15
14. LC-37 Mandatory Levels at 1413 MST-----	16
15. WSD Significant Level at 1537 MST-----	17
16. WSD Upper Air Data at 1537 MST-----	18
17. WSD Mandatory Levels at 1537 MST-----	19

## INTRODUCTION

19313B MLRS, Missile Numbers BH-198, BH-158, BH-170, BH-209, BH-194 and BH-215, Round Numbers V-443/OT-49 Thru V-448/OT-54, were launched from LC-33, White Sands Missile Range (USMR). New Mexico, at 1617:01, 1617:06, 1617:10, 1617:15, 1617:19 and 1617:24 MST, 4 Mar 83. The scheduled launch times were 1600 MST with a 4.5 second separation.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

## 1. Observations

**a. Surface**

(1) Standard surface observations to include pressure, temperature ( $^{\circ}\text{C}$ ), relative humidity, dew point ( $^{\circ}\text{C}$ ), density ( $\text{gm}/\text{m}^3$ ), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

at: (1) Low level wind data were obtained from pilot-balloon observations

## SITE AND ALTITUDE

LC-33 2 K11

(2) Air structure data (rawinsonde) were collected at the following  
Met Sites.

## SITE AND TIME

WSD 1231 PST

WSD 1341 MST

LC-37 1413 MST

WSD 1537 MST

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	Unrecorded	<input type="checkbox"/>
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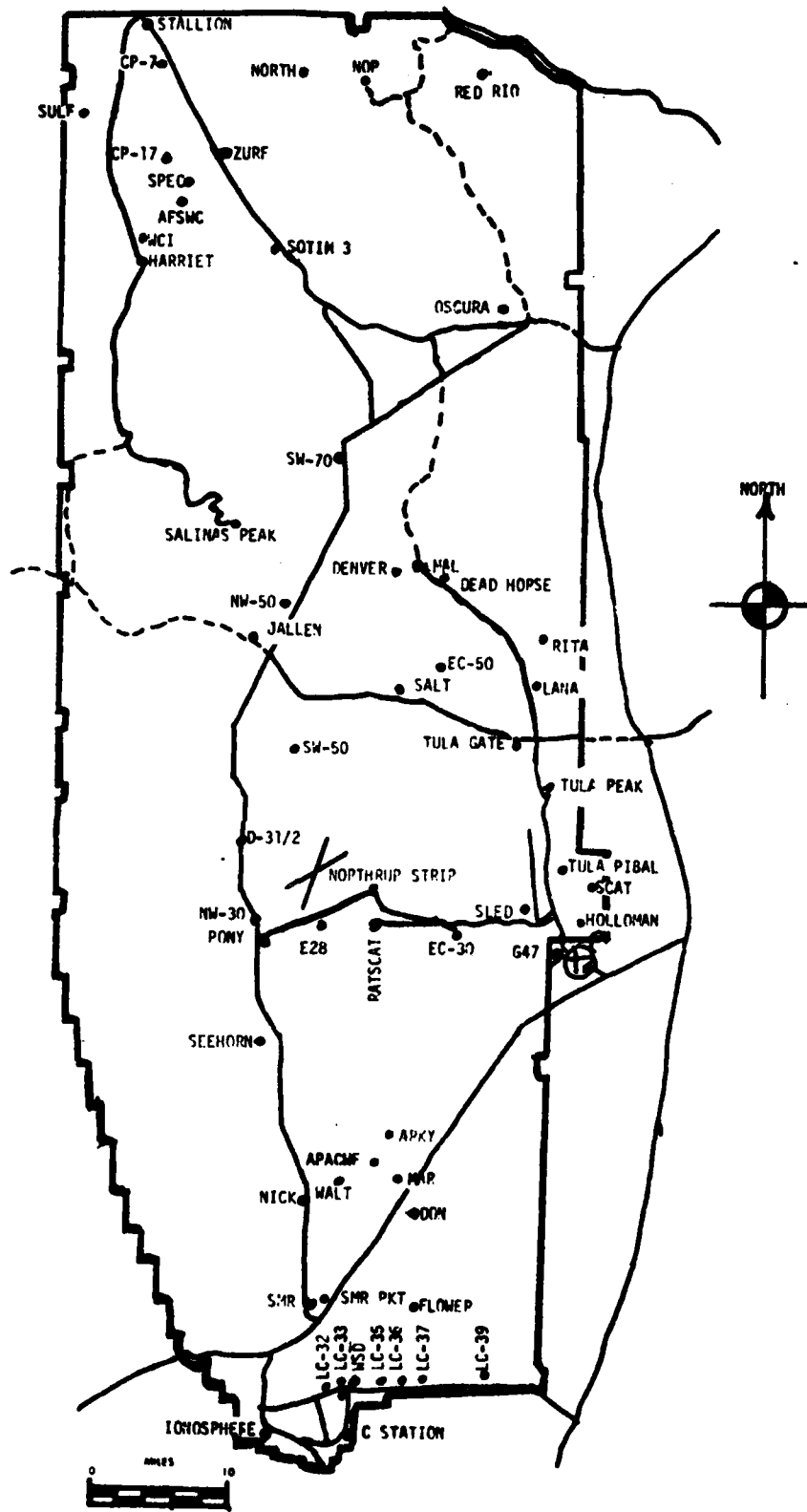
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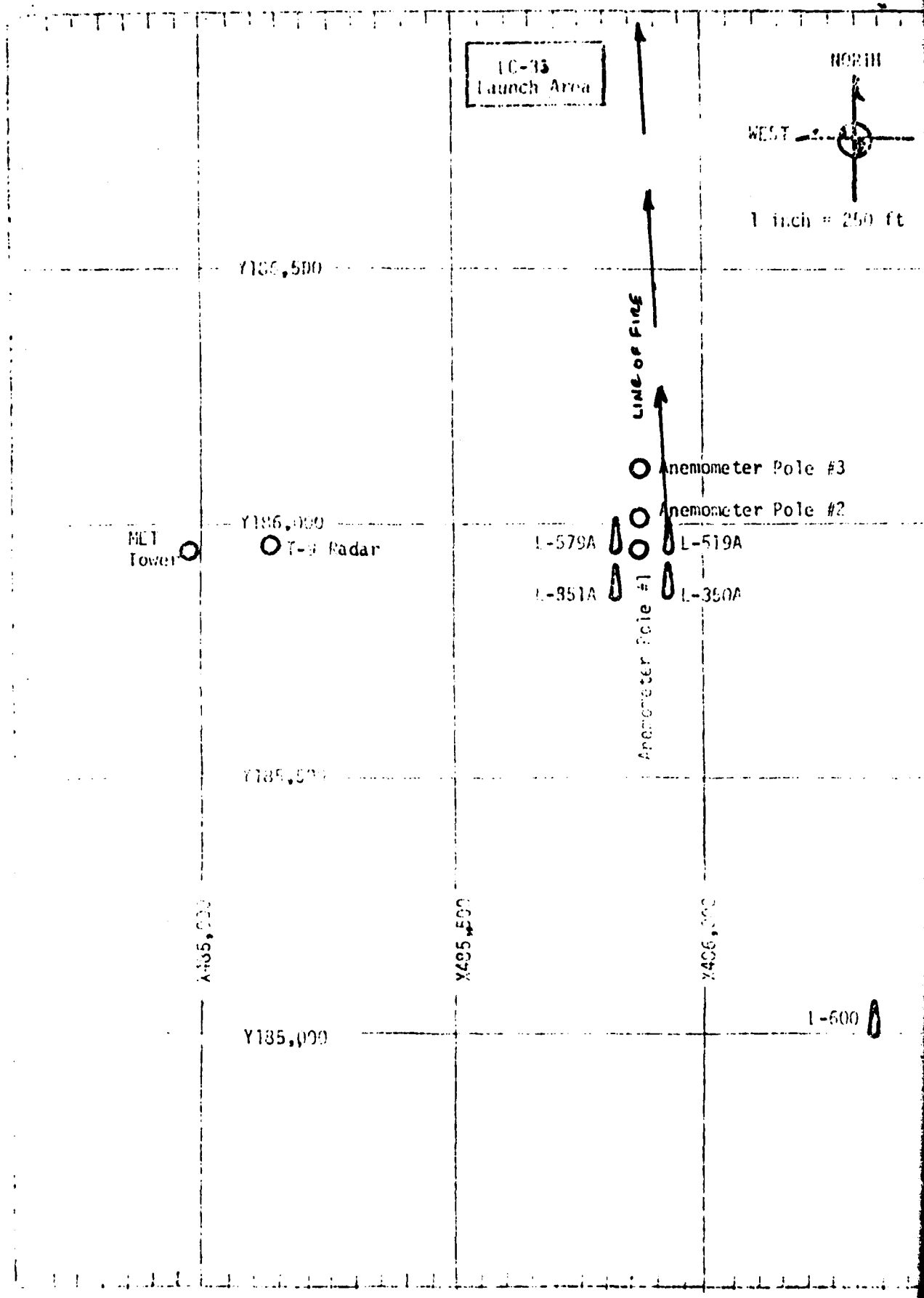
Date

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# WSMR METEOROLOGICAL SITES







10-33  
Launch Area

NORTH  
WEST  
1 inch = 250 ft

Y186,500

LINE OF FIRE

Anemometer Pole #3

Anemometer Pole #2

MET  
Tower

Y186,000  
T-9 Radar

L-579A

L-519A

L-351A

L-350A

Anemometer Pole #1

Y185,500

X485,000

X485,500

X486,000

Y185,000

1-500

# PROJECT SURFACE OBSERVATION

TABLE 1 STATION LC-33 E&A  
 DATE 4 MAR 83 X= 484,982.64 Y= 185,957.73 H= 3995.00  
 DAY MONTH YEAR

TIME M S I	PRESSURE mbs	TEMPERATURE C	DEW POINT C	RELATIVE HUMIDITY %	DENSITY gm/cm <sup>3</sup>	DIRECTION degs Tn	WIND SPEED kts	CHARACTER kts	VISIBIL- ITY
1617	862.2	12.8	0.8	44	1049	260	26		50

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS			
	1st LAYER		2nd LAYER		3rd LAYER					
	AMT	TYPE	HGT	AMT	TYPE	HGT				
	5	SC	2,500	1	AS	12,000	2	CS	20,000	RWU N-E-S

## PSYCHROMETRIC COMPUTATION

TIME: MST	1617	
DRY BULB TEMP.	12.8	
WET BULB TEMP.	6.8	
WET BULB DEPR.	6.0	
DEW POINT	0.8	
RELATIVE HUMID.	44	

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.29 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T -30	246	30	T -30	234	21	T -30	252	22
T -20	237	25	T -20	249	19	T -20	250	19
T -10	241	17	T -10	235	23	T -10	250	22
T .0	249	26	T .0	234	16	T .0	250	28
T +10	261	24	T +10	241	25	T +10	250	23

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T -30	267	21	T -30	248	25
T -20	268	22	T -20	253	25
T -10	259	15	T -10	248	27
T .0	259	26	T .0	258	32
T +10	273	28	T +10	253	30

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T -30	268	28	T -30	261	33
T -20	242	24	T -20	254	22
T -10	252	23	T -10	265	24
T .0	265	34	T .0	261	36
T +10	270	28	T +10	267	32

TABLE 4

## T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 4 March 1983

SITE: LC-33

SITE:

TIME: 1617 MST

TIME

WSTM COORDINATES:

WSTM COORDINATES:

X= 404,837.34

X=

Y= 134,124.44

Y=

H= 3,975.57

H=

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	260	26
150	260	26
210	260	26
270	262	29
330	264	35
390	265	39
500	265	43
650	266	50
800	267	47
950	268	35
1150	272	35
1350	273	35
1550	283	34
1750	289	34
2000	295	31

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE		
150		
210		
270		
330		
390		
500		
650		
800		
950		
1150		
1350		
1550		
1750		
2000		

TABLE 5

## AIMING COMPUTER MET MESSAGES

4 March 1983

WSD 1231 MST  
METCM1324064  
041950122865  
00409012 23660865  
01432030 23410854  
02450020 28090829  
03466021 27720789  
04463023 27250742  
05493022 26310697  
06499034 26460653  
07493030 26050612  
08500030 25710573  
09516031 25350537

WSD 1341 MST  
METCM1324064  
042070122864  
00427018 28650864  
01454022 28390853  
02463032 28070828  
03472031 27710788  
04482032 27280741  
05483042 26920696  
06486033 26470653  
07494036 26090612  
08491041 25740573  
09491042 25370536

LC-37 1413 MST  
METCM1324063  
042120124862  
00267008 28720862  
01327007 28410852  
02410017 28180826  
03435030 27820787  
04467027 27340740  
05463031 26370695  
06497032 26440652  
07503044 26060611  
08502046 25780572  
09495042 25410535

WSD 1537 MST  
METCM1324064  
042260122863  
00471020 28820863  
01478038 28570853  
02469028 28260827  
03471023 27870788  
04484035 27390741  
05511033 27070696  
06522027 26630653  
07523029 26180612  
08512036 25750573  
09491042 25330536

STATION ALTITUDE 3409.00 FEET MSL  
 4 HAZ. 03 1231 100% 001  
 ASCENDING 10. 114

STATION LEVEL DATA  
 OBSERVATION  
 WIND 55005

TABLE 6

PRESSURE	GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES CENTIGRADE	WET-BULB DEGREES CENTIGRADE	
864.8	3089.0	12.8	2.6	50.0
850.0	9462.1	9.2	-1.2	48.0
794.3	6289.9	3.8	-2.4	60.0
736.9	4731.1	-1.9	-2.3	97.0
700.0	9608.5	-5.4	-5.7	98.0
675.7	10631.3	-7.7	-8.0	98.0
653.0	11321.0	-8.2	-8.5	98.0
637.1	12017.1	-11.1	-12.5	90.0
619.1	12739.2	-12.3	-16.4	60.0
559.2	15271.2	-17.5	-23.5	59.0
550.9	15638.9	-18.3	-23.2	65.0
526.4	16750.7	-20.7	-29.9	43.0
500.0	17994.3	-23.8	-39.9	21.0

STATION ALTITUDE 3489.00 FEET MSL  
 9 MAR 63 1231 HRS MST  
 ASCENDING NO. 118

UPPER AIR DATA  
 0030020110  
 WHITE SANDS

TABLE 7

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TH)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	864.8	12.8	50.0	1050.2	654.0	210.0	12.0	1.000268
4000.0	864.5	12.7	50.0	1050.1	654.7	210.3	12.0	1.000268
4500.0	848.8	9.1	48.3	1045.1	655.3	224.0	12.5	1.000259
5000.0	833.2	7.6	52.7	1031.3	653.6	236.2	13.6	1.000253
5500.0	817.9	6.1	57.1	1017.7	651.0	260.1	15.2	1.000253
6000.0	802.0	4.7	61.5	1004.3	650.1	253.0	17.2	1.000249
6500.0	786.0	3.2	67.5	990.9	648.4	260.1	19.4	1.000247
7000.0	773.3	1.8	75.8	977.3	646.8	261.0	20.7	1.000244
7500.0	758.6	.3	84.1	964.0	645.1	262.9	21.8	1.000241
8000.0	744.6	-1.1	92.5	950.9	643.4	263.8	22.9	1.000239
8500.0	730.5	-2.5	97.2	937.8	641.7	267.1	23.7	1.000235
9000.0	716.6	-3.8	97.5	924.0	640.1	270.6	24.7	1.000229
9500.0	702.9	-5.1	97.9	911.6	638.5	273.8	25.7	1.000225
10000.0	689.4	-6.3	98.0	898.1	637.1	277.3	26.6	1.000220
10500.0	676.1	-7.4	98.0	884.7	635.7	280.6	27.6	1.000216
11000.0	663.1	-8.0	98.0	869.4	635.0	282.5	29.0	1.000211
11500.0	650.2	-8.9	95.7	855.8	633.8	280.5	31.7	1.000207
12000.0	637.5	-11.0	89.2	846.1	631.2	279.0	33.9	1.000201
12500.0	625.0	-11.9	69.6	832.6	630.0	278.2	34.7	1.000195
13000.0	612.6	-12.8	59.9	819.2	628.8	278.5	35.8	1.000190
13500.0	600.5	-13.9	59.7	806.1	627.4	279.8	37.1	1.000187
14000.0	588.5	-14.9	59.5	793.3	626.3	280.4	39.3	1.000183
14500.0	576.8	-15.9	59.3	780.6	625.0	281.4	39.4	1.000180
15000.0	565.3	-16.9	59.1	768.2	623.8	283.3	35.8	1.000177
15500.0	554.0	-18.0	62.7	755.9	622.5	286.3	31.4	1.000174
16000.0	542.8	-19.1	67.9	743.9	621.1	288.4	29.4	1.000170
16500.0	531.8	-20.2	48.0	732.0	619.8	289.9	33.0	1.000167
17000.0	521.0	-21.3	38.6	720.5	618.3			1.000163
17500.0	510.3	-22.6	29.7	709.3	616.8			1.000160

STATION ALTITUDE 3489.00 FEET MSL  
 4 MAR. 63 1231 HRS. 00.1  
 ASCENSION NO. 110

COORDINATE SYSTEM  
 WOLFE CREEK

TABLE 8

PRESSURE OF POTENTIAL		TEMPERATURE		WIND DATA	
MILLIBARS	FEET	ADP	DEGREE	DIRECTION	SPEED
		DEGREES	CENTIGRADE	DEGREES (TN)	KNOTS
850.0	4459.	0.2	-1.2	223.0	12.4
800.0	6094.	4.4	-2.2	255.2	17.6
750.0	7804.	-1.1	-2.1	263.4	22.4
700.0	9409.	-5.4	-5.7	274.5	25.9
650.0	11407.	-9.0	-9.6	280.5	31.7
600.0	13409.	-13.0	-20.0	274.9	37.2
550.0	15660.	-18.4	-23.4	287.5	29.9
500.0	17070.	-23.8	-39.4		



STATION ALTITUDE 3989.00 FEET MSL  
 4 MAR. 83  
 ASCENSION NO. 119

SIGNIFICANT LEVEL DATA  
 0630020114  
 WHITE SANDS  
 TABLE 9

STATION ALTITUDE 3989.00 FEET MSL  
 4 MAR. 83  
 ASCENSION NO. 119

GEOMETRIC ALTITUDE MILLIHARS MSL FEET	PRESSURE MILLIHARS	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
863.5	3989.0	12.8	1.8	47.0
850.0	4420.6	8.9	-1.2	49.0
826.2	5190.0	6.7	-1.4	56.0
777.7	6809.9	2.3	-3.2	67.0
756.6	7538.0	.4	-3.5	75.0
729.7	8488.7	-2.1	-4.1	86.0
700.0	9571.3	-3.8	-9.0	67.0
654.9	11284.7	-8.7	-12.3	75.0
616.9	12798.3	-12.2	-12.6	97.0
587.9	14003.7	-14.7	-15.1	97.0
500.0	17970.1	-23.4	-23.7	97.0

STATION ALTITUDE 3989.00 FEET MSL  
4 MAR. 43 1341 HRS MST  
ASCENSION 110. 119

UPPER AIR DATA  
0630020114  
WHITE SANDS

GEODETIC COORDINATES  
32.400043 LAT NFG  
106.37033 LON NFG

TABLE 10

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	863.5	12.8	47.0	1048.8	659.4	240.0	18.1	1.000266
4000.0	863.2	12.7	47.1	1048.7	659.7	240.1	18.1	1.000266
4500.0	847.5	8.7	49.7	1045.0	654.8	246.3	19.6	1.000259
5000.0	832.0	7.2	54.3	1031.1	653.2	251.5	21.4	1.000256
5500.0	816.7	5.9	58.1	1017.2	651.5	255.9	23.3	1.000253
6000.0	801.6	4.5	61.5	1003.3	649.9	259.7	25.3	1.000249
6500.0	786.8	3.1	64.9	989.6	648.3	262.8	27.4	1.000245
7000.0	772.1	1.8	69.1	976.0	646.8	265.5	29.5	1.000242
7500.0	757.7	.5	74.6	962.3	645.2	267.9	31.8	1.000238
8000.0	743.4	-.8	80.3	948.7	643.7	269.3	32.5	1.000235
8500.0	729.4	-2.1	85.8	935.3	642.1	270.5	32.7	1.000232
9000.0	715.5	-2.9	77.0	920.5	641.1	271.7	32.9	1.000225
9500.0	701.9	-3.7	68.3	905.9	640.1	272.8	33.0	1.000218
10000.0	688.4	-5.0	63.0	893.0	638.4	273.4	33.7	1.000214
10500.0	675.2	-6.5	71.3	880.6	636.7	273.9	34.5	1.000211
11000.0	662.2	-7.9	73.7	868.4	635.0	274.3	35.3	1.000207
11500.0	649.4	-9.2	78.1	855.8	633.4	274.7	36.1	1.000204
12000.0	636.7	-10.4	85.4	842.8	632.0	275.1	36.8	1.000201
12500.0	624.2	-11.5	92.7	829.9	630.6	275.5	37.4	1.000198
13000.0	611.9	-12.6	97.0	817.1	629.3	275.9	37.9	1.000195
13500.0	599.8	-13.7	97.0	804.2	628.0	276.3	38.5	1.000191
14000.0	588.0	-14.7	97.0	791.6	626.7	276.6	39.1	1.000187
14500.0	576.1	-15.8	97.0	778.9	625.3	276.6	39.7	1.000183
15000.0	564.5	-16.9	97.0	766.5	624.0	276.5	40.4	1.000180
15500.0	553.1	-18.0	97.0	754.3	622.6	276.5	41.0	1.000176
16000.0	541.9	-19.1	97.0	742.3	621.3			1.000173
16500.0	530.9	-20.2	97.0	730.5	619.9			1.000170
17000.0	520.2	-21.3	97.0	718.9	618.5			1.000167
17500.0	509.7	-22.4	97.0	707.5	617.2			1.000164

STATION ALTITUDE 3989.00 FEET MSL  
4 MAR. 43 1341 HRS MST  
ASCENSION NO. 119

WIND DIRECTION 180  
WIND SPEED 14  
WHITE SANDS  
TABLE 11

GEODETIC COORDINATES  
32.40043 LAT NPG  
106.37033 LON NPG

PRESSURE GEOPOTENTIAL MILLIBARS	FEET	TEMPERATURE		WFL-HUM. PERCENT	WIND DATA	
		AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4418.	8.9	-1.2	49.	245.4	19.4
800.0	6051.	4.4	-2.3	62.	260.0	25.5
750.0	7762.	-0.2	-3.6	74.	268.8	32.5
700.0	9562.	-3.8	-9.0	67.	273.0	33.1
650.0	11464.	-9.1	-12.3	78.	274.6	30.1
600.0	13480.	-13.6	-14.0	97.	276.3	30.5
550.0	15613.	-18.3	-18.6	97.		
500.0	17946.	-23.4	-23.7	97.		

STATION ALTITUDE 4051.37 FEET MSL  
4 MAR. 63 1415 HRS MST  
ASCENSION NO. 32

SIGNIFICANT LEVEL DATA  
3630140032  
LC-37

GEODETIC COORDINATES  
32.40175 LAT DEG  
106.31232 LON DEG

TABLE 12

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	
862.0	4051.4	13.1	1.5	45.0
855.9	4246.4	10.2	-1.8	43.0
850.0	4435.3	9.8	-1.9	44.0
830.4	5070.1	8.3	-1.8	49.0
763.2	7335.1	2.1	-4.2	63.0
716.6	8922.3	-2.9	-4.5	89.0
700.0	9601.5	-4.4	-5.9	89.0
662.4	11020.8	-8.7	-9.0	98.0
653.2	11377.7	-8.4	-8.5	99.0
636.0	12055.6	-10.4	-11.7	94.0
593.0	13813.2	-14.5	-14.6	99.0
584.6	14168.9	-14.5	-14.7	98.0
543.0	15996.6	-18.1	-18.7	95.0
534.8	16369.7	-19.4	-20.4	92.0
500.0	18000.2	-24.0	-26.3	81.0

STATION ALTITUDE 4051.37 FEET MSL  
4 MAR. 43  
ASCENSION NO. 32

UPPER AIR DATA  
0630180032  
LC-37

TABLE 13

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
4051.4	862.0	13.1	45.0	1045.9	460.1	150.0	0.0	1.000264
4500.0	848.0	9.6	44.5	1042.1	455.9	177.0	6.9	1.000257
5000.0	832.5	8.5	40.4	1027.4	454.6	208.0	7.8	1.000255
5500.0	817.2	7.1	51.7	1013.3	453.0	228.1	10.3	1.000251
6000.0	802.1	5.8	54.7	999.5	451.4	239.5	13.6	1.000247
6500.0	787.3	4.4	57.8	986.0	449.8	246.3	17.2	1.000243
7000.0	772.8	3.0	60.9	972.6	448.1	250.7	21.0	1.000240
7500.0	758.4	1.6	65.6	959.5	446.5	253.8	24.8	1.000236
8000.0	744.1	.1	73.4	946.6	444.7	256.0	28.7	1.000234
8500.0	730.1	-1.4	81.3	933.9	442.9	258.2	29.2	1.000231
9000.0	716.4	-2.9	89.0	921.4	441.2	260.5	28.4	1.000228
9500.0	702.7	-4.2	89.0	908.1	439.6	262.9	27.7	1.000223
10000.0	689.2	-5.6	91.5	895.6	437.9	266.3	27.9	1.000219
10500.0	676.0	-7.1	94.7	883.5	436.0	270.2	29.2	1.000215
11000.0	662.9	-8.6	97.9	871.5	434.2	273.8	30.5	1.000211
11500.0	650.1	-8.9	98.1	855.3	433.9	277.5	33.6	1.000207
12000.0	637.4	-10.7	94.4	844.8	431.6	280.6	37.0	1.000202
12500.0	624.8	-11.8	95.3	831.7	430.2	282.0	40.2	1.000198
13000.0	612.5	-12.8	96.7	818.6	429.0	282.5	43.4	1.000195
13500.0	600.4	-13.9	98.1	805.7	427.7	282.8	45.7	1.000191
14000.0	588.6	-14.5	98.5	791.7	426.9	282.7	46.9	1.000187
14500.0	576.8	-15.2	97.5	777.9	426.1	282.6	47.6	1.000184
15000.0	565.3	-16.1	96.6	765.4	424.9	282.2	46.3	1.000180
15500.0	554.0	-17.1	95.8	753.0	423.7	281.8	45.0	1.000177
16000.0	542.9	-18.1	95.0	740.9	422.5	280.3	44.5	1.000173
16500.0	531.9	-19.8	91.1	730.7	420.4	278.6	44.1	1.000170
17000.0	521.1	-21.2	87.7	719.9	418.6			1.000166
17500.0	510.4	-22.6	84.4	709.2	416.9			1.000163
18000.0	500.0	-24.0	81.0	698.7	415.1			1.000160

STATION ALTITUDE 4051.37 FEET MS,  
4 MAR. 83  
ASCENSION NO. 32

MANDATORY LEVELS  
0630180032  
LC-37

GEODETIC COORDINATES  
32.40175 LAT DEG  
106.31232 LONG DEG

TABLE 14

PRESSURE GEOPOTENTIAL		TEMPERATURE		WFL HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4432.	9.8	-1.9	44.		172.5	7.0
800.0	6073.	5.6	-2.7	55.		240.7	14.1
750.0	7790.	.7	-4.1	70.		255.2	27.1
700.0	9592.	-4.4	-5.9	89.		263.4	27.6
650.0	11491.	-8.0	-9.1	94.		277.5	33.6
600.0	13505.	-13.9	-14.1	94.		282.8	45.7
550.0	15662.	-17.5	-18.0	94.		281.3	44.8
500.0	17976.	-24.0	-26.3	81.			

STATION ALTITUDE 3989.00 FEET MSL  
 4 MAR. 43  
 ASCENSION NO. 121

SIGNIFICANT LEVEL DATA  
 0630020121  
 WHITE SANDS

GEODETIC COORDINATES  
 32.40043 LAT NFG  
 106.37033 LONG WFG

TABLE 15

PRESSURE MILLIHARS	GALVANEIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
862.8	3989.0	14.2	3.7	49.0
850.0	4400.9	10.8	-3	46.0
761.7	7359.2	2.2	-3.1	68.0
733.1	8369.7	-1.0	-2.9	47.0
700.0	9579.3	-2.3	-9.4	58.0
657.8	11189.3	-6.7	-13.6	58.0
587.4	14053.3	-14.5	-18.2	73.0
553.6	15520.3	-18.0	-23.1	64.0
520.3	17033.9	-21.9	-22.8	92.0
500.0	17994.4	-23.5	-27.0	73.0

STATION ALTITUDE 3989.00 FFFT WSL  
4 MAR. 83 1537 HRS MST  
ASCENSION NO. 121

UPPER AIR DATA  
0630020121  
WHITE SANDS  
TABLE 16

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37053 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	862.8	14.2	3.7	49.0	1042.4	661.5	265.0	20.0	1.000269
4000.0	862.5	14.1	3.5	48.9	1042.3	661.4	265.0	20.0	1.000269
4500.0	840.9	10.5	-4	46.7	1037.3	657.0	265.2	21.3	1.000259
5000.0	831.3	9.1	-7	50.5	1023.5	655.3	265.4	22.6	1.000256
5500.0	816.1	7.6	-1.0	54.2	1009.9	653.6	265.6	23.8	1.000252
6000.0	801.1	6.2	-1.5	57.9	996.6	651.9	265.8	25.1	1.000249
6500.0	786.4	4.7	-2.0	61.6	983.4	650.2	265.9	26.3	1.000245
7000.0	771.9	3.2	-2.6	65.3	970.5	648.5	267.2	27.6	1.000241
7500.0	757.6	1.8	-3.0	70.6	957.8	646.7	271.3	28.8	1.000238
8000.0	743.4	.2	-2.9	80.0	945.2	644.9	275.0	30.2	1.000236
8500.0	729.5	-1.1	-3.5	83.9	931.9	643.3	278.3	31.7	1.000232
9000.0	715.7	-1.7	-6.1	71.9	916.5	642.5	281.2	31.4	1.000224
9500.0	702.1	-2.2	-8.9	59.9	901.3	641.8	284.1	31.3	1.000217
10000.0	688.7	-3.4	-10.5	58.0	888.3	640.3	287.1	31.2	1.000212
10500.0	675.5	-4.8	-11.8	58.0	875.8	638.6	289.2	30.8	1.000208
11000.0	662.6	-6.2	-13.1	58.0	863.6	636.9	290.7	30.1	1.000204
11500.0	649.8	-7.5	-14.0	59.6	851.2	635.3	292.2	29.3	1.000201
12000.0	637.1	-8.9	-14.8	62.2	838.9	633.6	293.4	28.9	1.000197
12500.0	624.6	-10.3	-15.6	64.9	826.8	632.0	292.6	30.1	1.000194
13000.0	612.4	-11.6	-16.4	67.5	814.9	630.3	291.9	31.3	1.000191
13500.0	600.4	-13.0	-17.3	70.1	803.2	628.7	291.3	32.5	1.000188
14000.0	588.6	-14.4	-18.2	72.7	791.6	627.0	289.4	34.0	1.000185
14500.0	576.9	-15.6	-19.7	70.3	779.6	625.5	287.3	35.6	1.000181
15000.0	565.4	-16.8	-21.4	67.2	767.6	624.0	285.4	37.3	1.000177
15500.0	554.1	-18.0	-23.0	64.1	755.8	622.6			1.000174
16000.0	542.8	-19.2	-22.8	72.9	744.2	621.0			1.000171
16500.0	531.8	-20.5	-22.8	82.1	732.8	619.4			1.000169
17000.0	521.0	-21.8	-22.8	91.4	721.7	617.8			1.000167
17500.0	510.3	-22.7	-24.8	82.8	709.4	616.7			1.000163



STATION ALTITUDE 3009.00 FEET MSL  
 4 MAR. 83 1537 HRS MST  
 ASCENSION NO. 121

MANDATORY LEVELS  
 0030020121  
 WHITE SANDS

TABLE 17

PRESSURE GEOPOTENTIAL		TEMPERATURE		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4398.	10.8	-1.3	265.2	21.0
800.0	6043.	6.0	-1.5	265.8	25.2
750.0	7763.	.9	-2.9	273.3	29.5
700.0	9570.	-2.3	-9.4	284.6	31.3
650.0	11483.	-7.5	-14.0	292.2	29.4
600.0	13507.	-13.0	-17.3	291.3	32.5
550.0	15661.	-18.4	-23.0		
500.0	17970.	-23.5	-27.0		

HPL HUM.	
PERCENT	
46.	
58.	
76.	
58.	
60.	
70.	
67.	
73.	